

REMARKS

The Office Action mailed March 21, 2003 has been received and the Examiner's comments carefully reviewed. Claim 36 has been allowed. Claims 4-11 have been objected to. Applicants thank the Examiner for this notification. Claims 1 and 2 have been amended. Claims 46-56 have been added. No new subject matter has been added. Claims 1-15, 36-37, and 46-56 are currently pending. Applicants respectfully submit that the pending claims are in condition for allowance.

Rejections Under 35 U.S.C. §102

The Examiner rejected claim 37 under 35 U.S.C. §102(e) as being anticipated by Wentworth et al. (Pub. No. US 2001/0047887 A1). Applicants respectfully traverse this rejection.

Wentworth discloses a drill head for directional drilling including a sonde holder 14. The sonde holder 14 has a passage 34 extending between ends. A smaller diameter coupling socket 131 is located at one end, and a larger socket 114 is located at the other end. As the Examiner pointed out, the larger socket includes a drill tap formation having a frustum or conical shape.

Claim 37 recites a sonde housing having a housing body with an opening at each end. The housing also includes first and second cylindrical spaces located adjacent each of the openings of the ends, the first and second cylindrical spaces extending radially outward from the openings.

Wentworth does not disclose cylindrical spaces extending radially outward from the openings 131, 114 of the holder 14. For instance, the larger socket 114 of the Wentworth housing merely discloses a drill tap formation. The drill tap formation does not extend radially outward from the opening; that is, the formation does not have a portion with a larger diameter, for example, than the opening. In addition, the shape of the drill tap is not "cylindrical," as recited by claim 37. Rather, the drill tap formation is a frustum or conical shape. For at least these reasons, Applicants respectfully submit that claim 37 is patentable.

Rejections Under 35 U.S.C. §103

The Examiner rejected claims 1-3 and 12-15 under 35 U.S.C. §103(a) as being unpatentable over Wentworth et al. (Pub. No. US 2001/0047887 A1). Applicants respectfully traverse this rejection, however, have amended claims 1 and 2 to advance this application to allowance.

Claim 1 now recites a sonde housing including first and second end pieces welded to a main body. The main body and the end pieces all include fluid passages. A first offset fluid passage is located at a first interface between the welded first end piece and the main body. A second offset fluid passage is located at a second interface between the welded second end piece and the main body. The offset fluid passages provide a continuous fluid passageway through the sonde housing.

First, Wentworth does not teach or suggest a sonde housing having welded first and second end pieces. The Examiner stated that it would have been an obvious design choice to form the body from either welded multi-pieces or a single-piece. Applicants respectfully disagree as an offset passage cannot be easily machined or manufactured in a single-piece body. That is, the offset passage configuration is feasible via the claimed multi-piece construction.

Second, because Wentworth does not teach or suggest a welded multi-piece construction, Wentworth also does not teach or suggest an offset passage at an interface, as Wentworth has no interface in the single-piece body. Because Wentworth does not teach or suggest the claimed multi-piece construction, or does not teach or suggest offset passages at interfaces between end pieces and a body, Applicants respectfully submit that independent claim 1, and dependent claims 2-3 and 12-15 are patentable.

Allowable Subject Matter

The Examiner allowed claim 36. Claims 4-11 were objected to, but the Examiner indicated that these claims would be allowable if rewritten in independent form incorporating all the limitations of the base claim and any intervening claims. Applicants thank the Examiner for this notification.

New claims 46-53 correspond to objected-to claims 4-11; claims 4, 10, and 11 being re-written in independent form and incorporating all the limitations of base claim 1

and any intervening claim. Applicants respectfully submit that new claims 46-53 are in condition for allowance.

New claims 46-56

New claims 46-53 correspond to objected-to claims, as previously discussed.

New claim 54 recites a sonde housing having a housing body with first and second ends. The housing also includes first and second voids located along a fluid passage, and spaced apart from the ends of the housing. The voids have a cross-sectional area that is greater than adjacent areas of the fluid passage on either side of the void. Applicants respectfully submit that none of the cited art teaches or suggest the structural limitations recited in claim 54; and that therefore claim 54, and dependent claim 55 are patentable.

New claim 56 recites a sonde housing including an endpiece welded to one end of a main body. The main body and the end piece each have a fluid passage. An offset fluid passage is located at an interface between the welded end piece and the main body to provide a continuous fluid passageway through the sonde housing. For similar reasons as discussed with regards to claim 1, Applicants respectfully submit that claim 56 is patentable.

SUMMARY

It is respectfully submitted that each of the presently pending claims (claims 1-15, 36-37, and 46-56) is in condition for allowance and notification to that effect is requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number if it is believed that prosecution of this application may be assisted thereby.

Although certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentably distinct. Applicants reserve the right to raise these arguments in the future.



Date: June 20, 2003

Respectfully submitted,

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